

5 1. A system, comprising:
 a mobile station; and
 an access point that includes a first and second sectored antenna
combined to form an omni-directional radiation pattern.

10 2. The system of claim 1, wherein the first sectored antenna
transmits a first tone and the second sectored antenna transmits a second
tone differing from the first tone.

15 3. The system of claim 1, wherein the first sectored antenna
transmits a first signal and the second sectored antenna transmits the first
signal delayed in phase from the first signal.

20 4. The system of claim 1, wherein the access point further
includes an omni-directional antenna.

 5. The system of claim 1, wherein the mobile station includes first
and second sectored antennas.

5 6. A communications network, comprising:
an access point having at least two omni-directional antennas, where
the first omni-directional antenna is formed by the combination of multiple
sectored antennas.

10 7. The communications network of claim 6, where the
combination of multiple sectored antennas includes a first sectored antenna
having a sector to cover a radiation pattern of substantially 0 to 90 degrees
and another sector to cover a radiation pattern of substantially 180 to 270
degrees.

15 8. The communications network of claim 7, where the
combination of multiple sectored antennas includes a second sectored
antenna having a sector to cover a radiation pattern of substantially 90 to
180 degrees and another sector to cover a radiation pattern of substantially
20 270 to 360 degrees.

25 9. The communications network of claim 6, where the
combination of multiple sectored antennas includes first and second sectored
antennas, the first sectored antenna having a radiation pattern of
substantially 0 to 180 degrees and the second sectored antenna having a
radiation pattern of substantially 180 to 360 degrees.

30 10. The communications network of claim 9, wherein the first
sectored antenna transmits a first signal and the second sectored antenna
transmits the first signal delayed in phase from the first signal.

11. The communications network of claim 6, wherein the
combination of multiple sectored antennas includes three sectored antennas

5 having radiation patterns that combine to form the first omni-directional antenna.

12. The communications network of claim 11, wherein the three sectored antennas include a first sectored antenna having a radiation pattern of substantially 0 to 90 degrees, a second sectored antenna having radiation patterns to cover substantially 90 to 180 degrees and 270 to 360 degrees, 10 and a third sectored antenna having a radiation pattern of substantially 180 to 270 degrees.

15 13. The communications network of claim 6, wherein the combination of multiple sectored antennas includes four sectored antennas having radiation patterns that combine to form the first omni-directional antenna.

20 14. The communications network of claim 13, wherein the four sectored antennas each cover a radiation pattern of about 0 degrees to 90 degrees and are appropriately positioned to form the first omni-directional antenna.

25 15. The communications network of claim 6, further including a mobile station that includes first and second sectored antennas.

5 16. A receiver system of an access point, comprising:
two omni-directional antennas coupled to a receiver of the access
point, where at least one of the two omni-directional antennas is a
combination of two complimentary placed sectored antennas.

10 17. The receiver system of claim 16, wherein the two omni-
directional antennas allow Cyclic Delay Diversity (CDD) techniques to be
employed.

15 18. The receiver system of claim 16, wherein the at least one of the
two omni-directional antennas includes a first sectored antenna to transmit a
first signal and a second sectored antenna to transmit the first signal delayed
from the first signal.

20 19. The receiver system of claim 18, wherein the first and second
sectored antennas in a multiband system receive interleave symbols across
sub-bands.

25 20. The receiver system of claim 18, wherein the first sectored
antenna or the second sectored antenna is selected for receiving the best
mobile station signal.

30 21. The receiver system of claim 16, wherein a first omni-directional
antenna is placed in one corner of a display for a laptop computer and a
second omni-directional antenna is placed in another corner.

22. The receiver system of claim 16, wherein a first omni-directional
antenna is placed along one side of a display for a laptop computer and a
second omni-directional antenna is placed along another side of the display.